

OSMP - Prairie Dogs

Last Updated Wednesday, 05 April 2006

Little Dogs of the Prairie

Prairie dog colony infected with plague - August 4, 2005

Click to jump down to these topics:

- »Competition With Development
- »What about plague?
- »Living With Prairie Dogs
- »Prairie Dog Life
- »Boulder's Prairie Dog Ordinance

Ranchers and farmer compete with them for the land. Naturalists observe their curious habits. A family strolling along the Boulder Creek path might just enjoy watching them behave like a miniature family. Regardless of their perspective, most folks have an opinion about prairie dogs, and for many those sentiments are strongly held. Attitudes about prairie dogs tend to be formed around their role as competitor, as a curiosity or as a comrade.

Competition with Development

Over the past 100 years, much of the historic range of the black-tailed prairie dog has been converted to food production for humans, mostly for cattle pasture and grain fields. Around the turn of the century the United States government sponsored prairie dog poisoning programs to reduce competition with livestock and farmers. This program, which continues today, peaked in Colorado in 1921 when approximately 80,000 acres were poisoned.

Why all the fuss over a bunch of ground squirrels? The answer lies in the farmer and rancher's view of prairie dogs' impact to their livelihood. Prairie dogs compete with livestock for forage. They clip vegetation to maintain a view of their surroundings and eat the same grasses that would otherwise be available for cattle and horses. Over long periods of prairie dog activity grass species which ranchers find most desirable can disappear. They are often replaced with less palatable grass species with lower nutritional value. In farmed ground prairie dogs can decimate or destroy a crop of alfalfa, grains or hay.

Photo - Bulldozing a prairie dog town along Highway 36 to make way for a housing development.

People also compete with prairie dogs for shelter. Expanding urban areas, especially the rapidly growing Front Range in Colorado, has seen the conversion of prairie dog towns into people towns--as housing and commercial development replaces grasslands. No government-sponsored campaign against the prairie dogs has been necessary to insure the dominance of human uses in our towns and cities. Once prairie dogs are removed, the habitat is changed to such a degree prairie dogs usually don't have the opportunity or ability to reestablish themselves. Read about the city of Boulder's Prairie Dog Ordinance..

Curiosity about Prairie Dogs: Nothing New!

Long before the environmental problems of urban growth, naturalists marveled at the interesting habits of prairie dogs. In 1742 French explorers came upon them while traveling in the Dakotas and dubbed them le petit chien, the little dog. More than 50 years later Lewis and Clark collected the first specimen which was to be described by scientists (initially as the Louisiana marmot!). A live specimen was shipped back to President Jefferson from what is now North Dakota. Curious members of the explorers' party were surprised to find that they could repeatedly empty barrels of water into a prairie dog hole without filling it.

Their burrow system has been studied well enough so that we know today one might find the following: (1) a "listening post room" just under the surface and set off from their main burrow, (2) a separate "room" which they use as a toilet and which may be emptied periodically, (3) a nesting/sleeping chamber lined with dried grass. The nesting chambers are often elevated from the bottom of their tunnels so they remain dry when water flows into the burrow entrance.

Photo - (Left) From time to time a prairie dog will stand on its hind legs, stretch the body vertically and throw its front feet

high into the air while making a loud, sneezy yip. Jump-yipping soon spreads through the colony creating a contagious and wild dance. Naturalists believe that jump-yips probably help family groups maintain their territories, and may possibly be an "all-clear" signal once a predator has left the vicinity. Photo by Kevin Dobler.

Photo - (Right) two prairie dogs "kissing" or rubbing noses. Photo by Kevin Dobler.

The social life of black-tailed prairie dogs has been the topic of much study and interest by field naturalists and ecologists. For example, prairie dogs have a vocabulary of about 11 distinct calls and a host of postures and displays. When detecting danger, prairie dogs alert other members of the colony. They make a loud chirp while standing, on two or four legs, or lying prostrate in a burrow entrance. This anti-predator call has been given a variety of names including the "squit-tuck", the warning bark, and the "tik-uh." It is something of an evolutionary puzzle why prairie dogs would risk their own skin by drawing the attention of a predator in order to save other members of their town. Some scientists believe that prairie dogs only mean to warn their close kin.

A certain prairie dog behavior has been described as kin recognition or family member identification. But what they are doing is kissing. Black-tailed prairie dogs kiss when they meet within a family's territory. It typically goes something like this: a prairie dog, uncertain about the identity of a neighbor in her territory, cautiously creeps toward the other. She opens her mouth showing her teeth. If the other prairie dog is a family member, they will touch their mouths for an instant or for several seconds. Once they have kissed, prairie dogs may groom each other, nibble at one another's fur or wrestle around in mock battle. As with jump-yipping, when two prairie dogs kiss a chain reaction often follows with a colony full of kissing prairie dogs.

Photo - Birds of prey, like this young Golden Eagle, depend on the prairie dogs around Boulder for food. In areas where prairie dogs are exterminated, raptors are forced to move on. Photo by Perry Conway.

While the social life of prairie dogs is interesting and much studied, their role in grassland ecology is equally fascinating. Historically, bison grazed patches of mixed grass prairie short enough for prairie dogs to colonize. As prairie dogs fed upon and trimmed the vegetation, it shifted from a mature prairie to a more disturbed state with more weedy broadleaf plants. Under initial pressure of prairie dog grazing, the grass grew more rapidly and was richer in nutrients. Increased abundance of the weedy broadleaf plants attracted pronghorn antelope. Bison, mule deer and elk also visited prairie dog colonies to feed upon the nutrient rich grasses. Although elk and bison are long gone from most of the grasslands of the Great Plains, prairie dog colonies continue to support biodiversity by attracting a variety of species. These include fairly common and widespread animals such as Meadowlarks, Horned Larks, Cottontail Rabbits, and Deer Mice as well as species with closer ties to the prairie dog colonies such as Burrowing Owls.

Many other uncommon or rare species of grassland animals are attracted to Boulder because of our prairie dog colonies. These include Golden and Bald Eagles, Ferruginous Hawks, Badgers and Prairie Falcons. Black-footed ferrets, an endangered species now extirpated from most of their range--including the Boulder area--depend almost entirely upon prairie dogs for food and shelter. Learn more about the fascinating lives of prairie dogs on the city's web site.

Photo - Burrowing Owls feed upon insects and small mammals around prairie dog towns and depend upon prairie dog or badger holes for their nests. The massive destruction of prairie dogs during the last century may have contributed to the owl's precipitous decline. Photo by Steve Jones.

Can We Be Comrades?

It is difficult to spend much time thinking about prairie dogs without noting the astonishing similarities to human beings. The prairie dog is a member of our select club--the animals that change the landscape to suit their needs and habits. People have been busy changing the landscape in dramatic ways for thousands of years--but we aren't alone or even the first. Beavers and their ancestors have been flooding the river valleys of North America to create their ponds since before the Ice Age. Prairie dogs have been trimming the vegetation of the high plains for at least as long.

Prairie dogs also live in family groups, known as coteries, and have an elaborate system of communication (well the yip-

jump is not quite the Internet, but it meets the prairie dogs' needs). They kiss, wrestle, and defend the boundaries of their territories. When the landscape does not suit them, they change it to be safer and more comfortable in their homes. The prairie dog modified landscape attracts a distinct group of animals like burrowing owls, black-footed ferrets, hawks and eagles just as our cities and towns attract pigeons, raccoons, house sparrows and fox squirrels. However, unlike human populations which continue to grow and spread out over the landscape, the extent and numbers of prairie dogs are shrinking. Out of an estimated 100 million acres of active black-tailed prairie dog colonies, about 2 percent remains.

Poisoning programs aimed at preserving agricultural productivity have been responsible for most of this decline. Urban development and bubonic plague are becoming significant concerns especially in the last few decades. The black-footed ferret has been driven to verge of extinction by the reduction of prairie dog colonies. Burrowing owls have been extirpated from the Boulder Valley. Conservation biologists are concerned that other species dependant upon prairie dogs may follow in what has been described as an "ecological train wreck."

Photo - This rare albino prairie dog appeared in a prairie dog town on OSMP in 2003.

In 1996, the Open Space Department developed a prairie dog habitat conservation plan in an attempt to head off such a train wreck in the Boulder Valley. The department worked with a committee of farmers, rural residents, environmentalists, animal rights advocates, land managers and interested citizens to develop a set of goals for prairie dog management on OSMP. The plan sought to reduce the conflicts between prairie dogs and adjacent land uses by establishing a system of prairie dog habitat conservation areas throughout the OSMP land system. The prairie dog management plan is now being updated by staff to reflect changing policies and land uses in Boulder Valley, including the September 2000 City Council ordinance which prohibits the poisoning of prairie dogs within city limits.

In order to develop the preserve system, the OSMP land system has been broken down into several categories. The first category is "ecological suitability." Most grasslands on Open Space were considered to be ecologically suitable for prairie dogs. Coniferous forests, wetlands, tallgrass prairie, and riparian areas are ecologically unsuitable. Ecologically suitable lands were then considered for their "cultural suitability." Irrigated crops and pasture were considered to be culturally unsuitable because the Open Space & Mountain Parks Department has a part of its mission, the preservation of agricultural land uses in the Boulder Valley. Areas being reclaimed from a previous land use (for example, the gravel mine along Coal Creek or the strip farming on Gunbarrel Hill) were also considered culturally unsuitable--at least until a healthy native grassland is restored. As part of the cultural suitability analysis, the Open Space & Mountain Parks Department also wanted to insure that there would be prairie dog colonies in places where people could enjoy observing them and where educational activities could be focused. The remaining suitable habitat was then examined more closely, using generally accepted principles of preserve design. For example, large, contiguous blocks of habitat usually make better preserves than small, isolated blocks. The preserve design was then modified for the specific requirements of prairie dogs such as soil type, slope, vulnerability to plague and barriers to dispersal. The requirements of those species which depend upon prairie dog colonies (burrowing owls, raptors and badgers) were also taken into consideration when developing the preserve design.

Photo - Urbanization along the Front Range has fragmented prairie dog colonies, hemming the remaining animals into to ever-smaller parcels. Unable to disperse to new areas, burgeoning prairie dog towns may overgraze the available vegetation.

The resulting preserve system includes approximately 4,600 acres in seven habitat conservation areas. Prairie dogs will exist essentially undisturbed in habitat conservation areas where management activities will focus upon encouraging prairie dogs to create and maintain habitats for a variety of plant and animal species. The first phase of the grassland management plan also contains a set of policies describing in greater detail the Open Space & Mountain Parks Department's control and monitoring programs, educational initiatives, and public process as it relates to prairie dog management. Prairie dog conservation in the Boulder Valley faces many questions. Will prairie dog population levels recover before the next plague outbreak? Will the natural and artificial barriers to dispersal be effective in keeping prairie dogs out of important agricultural areas and neighboring properties? Perhaps most importantly, will we be able to manage these curious competitors as comrades? Learn more about the serious threats to prairie dog conservation on the City of Boulder web site.

Photo - A prairie dog and rabbit killed by poisoned grain. Poisoning programs often kill non-target animals along with the

prairie dogs. What About Plague?

Do prairie dogs carry plague? Fleas present on prairie dogs and other rodents like the fox squirrels in your backyard, rats and chipmunks can carry sylvatic plague, although its frequency is very rare. Are you likely to contract plague from prairie dogs?

NO! In order to catch plague, you have to first pick up and be bitten by an infected flea. This is extremely unlikely. To reduce your risk even farther, observe these precautions:

Never get close to or touch a wild rodent (squirrel, chipmunk, prairie dog, etc.) Don't approach or handle dead rodents. Never feed wildlife. When animals come up to you, they could transmit an infected flea. Don't venture into prairie dog colonies or approach their burrows. Keep your dog away from prairie dog towns or any dead rodent. Your dog could pick up an infected flea and transmit it to you. Besides, it's illegal for dogs to chase or harass wildlife and could result in a heavy fine for you, or even the destruction of your dog. Learn more on our page for dog owners. Prevent domestic cats from prowling around prairie dog towns, since they too may bring infected fleas home to you.

For a more detailed and technical discussion of sylvatic plague and its transmission by rodent vectors, follow this link.

Additional information is also available on the Boulder County Public Health Web site.

More Wildlife Links

- »Wildlife Watching Ethics
- »Mammals
- »Birds
- »Insects
- »Bears & Mountain Lions
- »Rare and Sensitive Species
- »Wildlife Protected by Area Closures
- »Reptiles / Amphibians
- »Bats